

Darlington coupled circuitry 158, FIG. 37. The collectors of the both transistors are connected to a resistor 162, FIG. 37. This collector resistor 158, FIG. 37 of these two transistors will now carry current during that time, when there is a positive voltage output from the detector circuit 152, FIG. 37 and thus across this resistor 162, FIG. 37 is generated a certain voltage.

In case the driver's wakeup signal section of the FIG. 37 circuitry in Unit A has detected a longer than a second lasting closing of the eyes of the automobile driver, then a voltage will be generated across the collector resistor 163, FIG. 37.

Both voltages from resistors 162 and 163 will now be combined by means of diodes 164, FIG. 37 and 165, FIG. 37 in an AND circuitry 166, FIG. 37 and activate a PNP transistor 167, FIG. 37 which turns on the sleep preventing device's audio alarm buzzer 18, FIG. 37. This buzzer 18 is connected to the collector 168, FIG. 37 of transistor 167, FIG. 37.

The other units: Unit B, Unit C, Unit D, Unit E and Unit F are parallel coupled in similar way as Unit A, to the sleep preventing audio alarm buzzer 18, FIG. 37. In case the detectors of these other units, units B, C, D, E and F don't detect any eye-wetting signals, then they will not have any output current for the sleep preventing devices audio alarm buzzer.

But whenever they are detecting eye-wetting signals and simultaneously receiving in their drivers wake-up signal section, shown in FIG. 37 and also in FIG. 8, a longer than one second lasting closed eye signal, they are generating voltage to actuate the audio alarm buzzer 18, FIG. 37.

What is claimed is:

1. An eyeglasses attachable device for use by a person including a driver with emitting means for generating beams and with receiving detector means for receiving said emitting means generated beams, where the emitting means are sensing at least one beam across the eye just above the eyeball surface, but below the level of the surface of the eyelid in the direction of the beam receiving detector means, comprising:

- (1) emitting means having a plurality of emitters for generating at least one beam;
- (2) slide adjustable mounting means for mounting said emitting means on the temple of said eyeglasses, in such a way, that said beam traverses one of the driver's eyes just above the surface of the eye and between the upper and lower eyelids, while the driver's eyes are open;
- (3) beam widening means, consisting of cylindrical or convex lenses in front of the emitter means and in front of the beam receiving detector means, which make the distance variations between the emitted beam and the eyeball less critical in terms of the operation sensitivity of the device;
- (4) electronically adjustable selecting means for selecting one of the plurality of emitters on the temple of said eyeglasses, in such a way that the selected beam traverses one of the driver's eyes just above the surface of the eye and between the upper and lower eyelids, while the driver's eyes are open;
- (5) said beam receiving detecting means receiving a full beam when the driver's eyes are opened and receiving reduced, scattered beam parts when this driver's eyes are closed, for putting out electrical signals, characteristic of the received full beam and scattered beam;
- (6) electronic alarm signal generating circuitry for receiving said electrical signals, and detecting input varia-

tions and converting said input variations into an alarm signal for alerting the driver, when the driver's eyes are closed;

- (7) acoustic alarm generator, triggered by said alarm signal, by means of an electrical circuitry, for producing an audible alarm, for waking up the driver;
- (8) a power source for powering the beam emitters, the beam receiving detector means, the selecting means, the alarm signal generating circuitry, the electronic circuitry and the acoustic alarm generator.

2. An eyeglasses attachable device according to claim 1, further comprising:

- (1) ultrasonic transducers/transmitters as said emitters, each for generating an ultrasonic beam, and ultrasonic transducer/receiving detector means as said beam receiving detector means.

3. An eyeglasses attachable device, according to the claim 2, wherein the electronic circuitry comprises:

- (1) an amplifier to amplify the from the ultrasonic transducer/receiver received ultrasonic beam signals;
- (2) an RC filtering circuitry to filter out low frequency signals;
- (3) a detector and RC circuitry for generating a delay before the onset of the audible alarm;
- (4) two NPN transistors in a Darlington coupling;
- (5) voltage divider consisting of two resistors for the emitter of the second transistor in the Darlington coupling;
- (6) a buzzer as the acoustic alarm generator;
- (7) wherein the output of the ultrasonic transducer/receiver is connected via an amplifier, the RC filter circuit and the diode/RC detector circuit to the base of the first NPN transistor; the voltage divider connected to the emitter of the second NPN transistor for generating approximately a one second time delay by said RC circuit before said buzzer sounds.

4. An eyeglasses attachable device according to claim 1, further comprising:

- (1) infrared light emitters as said emitters, each for emitting an infrared beam, and infrared light receiving detector means as said beam receiving detector means;
- (2) wherein said beam receiving detector means constitutes a first light detector means; and further comprising;
- (3) second light detector means, consisting of a light detector mounted on the side of the first light detector on the eyeglasses, which second light detector is receiving full amount of said infrared light when the driver's eye is open and while at the same time the driver is looking downward, and reduced ambient scattered light, when the driver's eye is closed, for putting out said electrical signals;
- (4) ambient light influence reducing means, consisting of a photocell for reducing the ambient light influence, which is incorporated into the electronic alarm signal generating circuitry as a negative light-resistance element by means of being coupled parallel with a resistor and in series with the infrared light receiving detector means between plus and minus leads of said power source;
- (5) infrared light reflecting means in front of the eyeglasses and behind the temple of the eyeglasses in order to reduce the effect of bright sunshine during daytime driving;